

REVISION OF CHRYSOGONUM (COMPOSITAE, HELIANTHEAE)

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In the course of recent studies on the subtribe Melampodiinae (Stuessy, 1973, 1975), *Chrysogonum* L. was discovered to be a small but poorly understood genus traditionally recognized (Bentham & Hooker, 1873; Hoffmann, 1890) as being related to *Moonia* Arn., *Lindheimera* A. Gray & Engl., and *Engelmannia* Torrey & Gray. One of the most perplexing problems in *Chrysogonum* has been proper generic circumscription as evidenced by the 15 included species that are morphologically and geographically diverse. In the present paper based on study of herbarium material, the taxonomic history of the genus is traced, generic relationships are discussed, many species are excluded, and the remaining single species with two varieties is described and illustrated.

TAXONOMIC HISTORY

In Linnaeus' *Species Plantarum* (1753) and *Genera Plantarum* (1754), *Chrysogonum* was first validly described to contain two herbaceous species: *C. peruvianum* and *C. virginianum*. Several years later in the *Familles des Plantes* of Adanson (1763), *Chrysogonum* was placed in the aggregate genus *Cargilla* Adans. along with *Melampodium* L. and portions of *Chrysanthemum* L. and *Bidens* L. Cassini (1827), following his treatment of many other genera of Compositae, described a new genus, *Diotostephus*, allied closely to *Chrysogonum* and containing the single species, *D. repens*. DeCandolle (1836) treated Cassini's *Diotostephus* as a synonym of *Chrysogonum* and recognized two species in the genus, *C. virginianum* and *C. diotostephus*, both from the southeastern United States. In addition, he referred Linnaeus' *C. peruvianum* to the genus *Zinnia* L. Bentham and Hooker (1873) counted six species of *Chrysogonum* in their *Genera Plantarum*, and they also included two other genera in synonymy that had been described previously: *Moonia* Arn. and *Pentalepis* F. Muell. It was at this point that the generic concept of *Chrysogonum* began to enlarge considerably, for not only were *Moonia* and

Pentalepis morphologically quite different, but they came from Ceylon and Australia, respectively. An additional isolated species, *C. philippinense*, was described from the Philippine Islands by Elmer (1906). Further enlargement and a formal emendation of the genus were made in a treatment by Brown (1935) in which he described from Rapa and the Marquesas Islands in the Pacific a new section, *Quadrimeria*, that included three new shrubby species: *C. album*, *C. coriaceum*, and *C. rapense*. Sherff, in a treatment of some Compositae of southeastern Polynesia (1937), elevated sect. *Quadrimeria* to generic status as *Oparanthus*. *Chrysogonum* became even more heterogeneous when Humbert (1958) added three new species from Madagascar, viz. *C. leandrii*, *C. madagascariense*, and *C. stenocephalum*. Recently, *Moonia* has been removed from *Chrysogonum* and referred to the subtribe Coreopsidinae (Stuessy, 1973, 1975). However, the taxa that still remain in *Chrysogonum* at the present time are morphologically very diverse and geographically widely distributed.

GENERIC RELATIONSHIPS

As treated in the present revision, *Chrysogonum* consists of only one species, *C. virginianum*. From this perspective the generic relationships of the genus are relatively clear, despite the earlier confusion caused by the presence of many morphologically diverse species.

Chrysogonum is related closely to three other genera of the subtribe Melampodiinae: *Berlandiera* DC.; *Engelmannia*; and *Lindheimera*. All of these taxa possess an unusual and unifying feature: the "achene-complex" (Rollins, 1950). This structure of the capitulum is a basally fused complex of one phyllary, one fertile female ray floret, two to three sterile hermaphroditic disc florets, and two to four receptacular paleae. At maturity of the achenes, this whole unit is dispersed together. No other genera of the Heliantheae possess this distinctive morphological feature except *Parthenium* L. and *Parthenice* A. Gray, both of which are regarded as somewhat related to *Chrysogonum*, but both have stronger affinities with the subtribe Ambrosiinae *sensu stricto* (Stuessy, 1973).

Of the three genera mentioned above as being related to *Chrysogonum*, *Lindheimera* is most similar in overall morphological

aspects. The chromosome number of *Lindheimera* is diploid with $n = 8$ (Turner & Johnston, 1956) whereas that of *Chrysogonum* is tetraploid with $n = 16$ (Jones, 1968; Solbrig, Kyhos, Powell & Raven, 1972). The two genera are distinguished most easily by the alternate leaves and annual habit of the former and the opposite leaves and perennial habit of the latter.

TAXONOMIC TREATMENT

Chrysogonum Linnaeus, Hort. Cliff. 424. 1737. Sp. Pl. 2: 920. 1753. Gen. Pl. ed. 5. 391. 1754. LECTOTYPE SPECIES: *C. virginianum* L.

Cargilla Adans. Fam. Pl. 2: 130. 1763, *pro parte*.

Diotostephus Cass. Dict. Sci. Nat. 48: 543. 1827. TYPE SPECIES: *D. repens* Cass.

Perennial, rhizomatous herbs. Leaves opposite (sometimes appearing basal), 3(-5)-nerved toward base. Capitula terminal, solitary. Receptacle convex. Involucre cupulate, biseriate. Ray florets carpellate, fertile; ligules yellow; pappus a short abaxial collar; achenes each attached basally to a single inner phyllary, 3 paleae, and 3 sterile disc florets (termed an "achene-complex," Rollins, 1950). Disc florets hermaphroditic, sterile; corollas yellow; anthers brown to black, abaxially ridged, with basal lobes acute; style filiform; stigma undivided (sometimes slightly bifid); ovary filiform; pappus absent. Paleae oblanceolate, scarious. Chromosome number, $n = 16$.

1. **Chrysogonum virginianum** Linnaeus, Sp. Pl. 2: 920. 1753.

Plants 3-35 cm. tall. Stems erect to decumbent, terete, green to purple, subglabrous to usually pilose with hairs up to 2 mm. long. Leaves cauline or basal, with tapering petioles 1-15 cm. long, 0.8-2 mm. diam.; blades narrowly ovate to obovate, 1.5-9.9 cm. long, 0.8-6.9 cm. wide, at apex acute to rounded, at base attenuate to subcordate, with the margin subentire to dentate, with both surfaces strigose with hairs 0.5 mm. long. Capitula 1.5-3.4 cm. diam., 0.7-1.2 cm. tall. Peduncles 2-22 cm. long, 0.7-1.8 mm. diam., pilose with hairs up to 1 mm. long. Receptacle 2-3 mm. diam. Outer phyllaries 5(-6), lanceolate to ovate, 6.5-15 mm. long, 2.5-7 mm. wide, at apex mucronate to acuminate, strigose on abaxial and upper portion of adaxial surfaces and on margin ciliate with hairs 0.5 mm. long. Inner phyllaries 5(-6), elliptic, scarious. Ray florets 5(-6); ligules elliptic, 6-17 mm.

long, 3–9 mm. wide, at the apex 3-lobed, with veins on undersurface light green; tube 0.8 mm. long, 0.4 mm. diam., puberulent; pappus a small collar 0.8 mm. tall; achenes obovoid, flattened radially, with thin longitudinal keels on both surfaces, 3–4 mm. long, 2–2.5 mm. wide, puberulent toward apex. Disc florets 25–50; throat narrowly funnelform, 2.5–2.7 mm. long, 1–1.2 mm. diam.; lobes triangular, reflexed, 0.9 mm. long, at apex subglabrous to comose; tube 0.3–1 mm. long, 0.2 mm. diam.; anthers 2 mm. long, with apical appendage tapered; style 6 mm. long, 0.2 mm. diam.; ovary 2.5 mm. long, 0.2 mm. diam.; pappus absent. Paleae 4 mm. long, 0.6 mm. wide. Chromosome number, $n = 16$.

KEY TO VARIETIES

1. Plants 15–35 cm. tall; stems erect; leaves primarily cauline (internodes well developed); primarily North Carolina, Virginia, West Virginia, and Maryland. 1a. var. *virginianum*.
1. Plants 3–14 cm. tall; stems often decumbent; leaves nearly all basal (internodes very short); primarily Mississippi, Alabama, Florida, Georgia, Tennessee, South and North Carolina. 1b. var. *australe*.

1a. *Chrysogonum virginianum* L. var. *virginianum* Figures 1–4.

TYPE: **Virginia**. Specific locality and date unknown, *J. Clayton* “298” (“communicata per J. F. Gronovium;” Linnaeus, 1737.) (Lectotype chosen, BM!).

Chrysogonum virginianum L. var. *dentatum* A. Gray, Bot. Gaz. 7: 31. 1882.

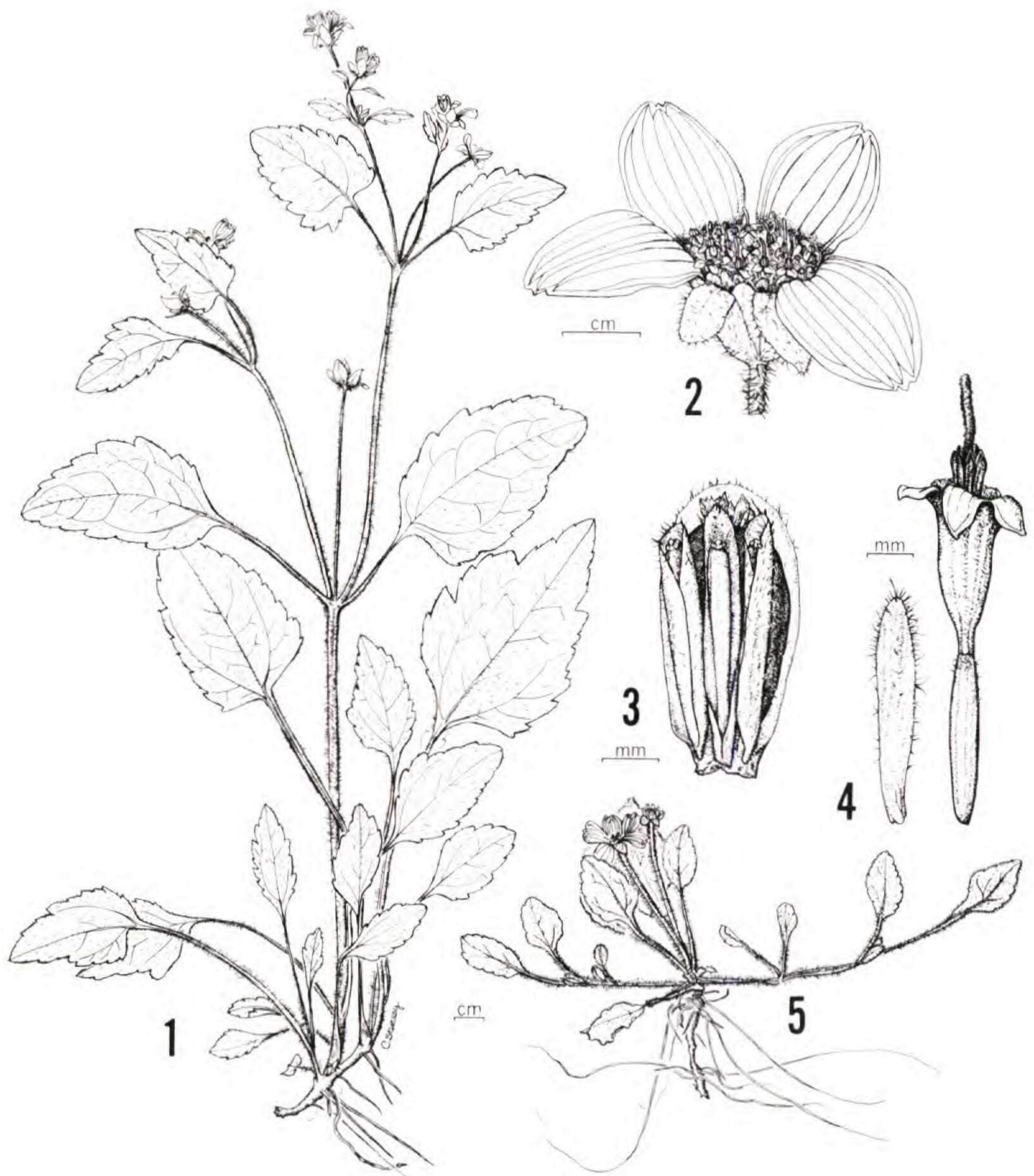
TYPE: **Maryland**. Montgomery Co., High Island in the Potomac River, 6 June 1881, *J. D. Smith s.n.* (Holotype, GH!).

Plants 15–35 cm. tall. Stems erect. Leaves primarily cauline with petioles 1–15 cm. long; blades narrowly ovate to ovate, 3.5–9.9 cm. long, 2.9–6.9 cm. wide, at base attenuate to subcordate. Peduncles 2–22 cm. long. Outer phyllaries 7–15 mm. long, 3.5–7 mm. wide. Chromosome number unknown.

DISTRIBUTION — Northern piedmont and Appalachian highlands primarily in North Carolina, Virginia, West Virginia, and Maryland (Figure 6).

PRINCIPAL FLOWERING DATES — April to July.

The principal morphological feature separating *Chrysogonum virginianum* var. *virginianum* from var. *australe* is the length of the stem internodes. Longer internodes in the former taxon result in a taller plant with many cauline leaves. However, in the early



Figures 1-5. *Chrysogonum virginianum*. 1-4, var. *virginianum*; 5, var. *australe*. 1 (Allard 8792, US), 5 (Palmer 35392, GH), habit; 2, head (with one ligule removed); 3 (Steele s.n., NY), achene-complex; 4, disc floret and palea. 2 & 4, Chickering s.n. (NY). 1 & 5 same scale.

spring when new leaves are produced, plants of var. *virginianum* are often difficult to distinguish from those of var. *australe*. An excellent example of this condition in var. *virginianum* is seen in *Fernald & Long 7980* (GH) collected on 5 April in southeastern Virginia in which the long stems (over 30 cm.) from last year are still attached to the cluster of new basal leaves and young flowering heads all under 10 cm. in height. Despite this difficulty, the two recognized varieties can usually be distinguished with confidence. A number of morphological intermediates exist, however, and these have been separately cited below and plotted in Figure 6.

Chrysogonum virginianum var. *dentatum* (Gray, 1882), with its more strongly serrate leaf margins, is regarded here as nothing more than a minor morphological variant undeserving of formal taxonomic recognition.

REPRESENTATIVE SPECIMENS (var. *virginianum*). — **District of Columbia.** 10 Oct 1876, *Chickering s.n.* (NY). **Maryland.** MONTGOMERY CO.: Great Falls, 4 Apr 1968, *Harding s.n.* (NCU). **North Carolina.** ANSON CO.: 7 mi N of Lilesville, *Radford 43659* (NCU). CASWELL CO.: 1 mi N of Concord Church, SSW of Locust Hill, *Bell 11875* (NCU). FORSYTH CO.: Winston-Salem, *Wyatt 804* (NCU). ORANGE CO.: Battle Park, Chapel Hill, May 1939, *Ward & Christenberry s.n.* (NCU). ROAN CO.: near Spencer, *Palmer 39977* (GH). WAKE CO.: 4 mi E of Apex, *Ahles & Carswell 58717* (NCU). **South Carolina.** FLORENCE CO.: 0.5 mi SW of Pee Dee River, *Bell 6138* (NCU). **Virginia.** AMHERST CO.: along John's Creek near James River, *Freer 1433* (GH). BUCKINGHAM CO.: 2.6 mi NE of county line on Co. Rd. 605, *Ramsey, Hooks, Ruska & Waggoner 7649* (NCU). HALIFAX CO.: 12 mi E of Danville, *Fosberg 15382* (GH). MONTGOMERY CO.: 2 mi SE of Ellett, *Kral 10227* (NCU). PRINCE GEORGE CO.: Garysville, *Fernald & Long 7980* (GH). SHENANDOAH CO.: S end of Short Mt., *Allard 8792* (US). YORK CO.: N shore of Tutters Neck Pond, SE of Williamsburg, *Grimes 3817* (NY). **West Virginia.** GREENBRIER CO.: White Sulphur Springs, 1838, *Buckley 5* (GH, US). MONROE CO.: near Organ Cave, 1 Jul 1941, *Sharp s.n.* (WVA). TYLER CO.: near Middlebourne, 8 May 1937, *Brooks & Margolin s.n.* (WVA).

REPRESENTATIVE SPECIMENS (morphological intermediates). — **District of Columbia.** *Sylvester 22* (NY). **Georgia.** DE KALB CO.: Stone Mt., 1-18 May 1895, *Small s.n.* (NY). **Maryland.** PRINCE GEORGES CO.: Glen Echo Heights, 3 May 1914, *Steele s.n.* (GH). **North Carolina.** BRUNSWICK CO.: 0.3 mi S of US 74 on NC 40, *Bell & Kim 263* (NCU). DURHAM CO.: Duke Univ. Campus, *Barrell 5* (NY). GUILFORD CO.: 2 mi N of Gibsonville, *Bell 11703* (NCU). NEW HANOVER CO.: Wrightsville, *Ahles & McCrary 58896* (NCU). **Pennsylvania.** FULTON CO.: Tonotoway Creek, 19 May 1956, *Krouse s.n.* (NCU). **South Carolina.** CHARLESTON CO.: Porchers Bluff, Christ Church Parish, *Mearns 58* (US). RICHLAND CO.: near Columbia, 27 Apr 1937, *Chapman s.n.* (GA). **Virginia.** AUGUSTA CO.: 1 mi N of Craigsville, *Steele 107* (US). ROCKBRIDGE CO.: Natural Bridge, 28 Apr 1886, *Kennedy s.n.* (GH). **West Virginia.** RICHIE CO.: near Cairo, Apr 1930, *Goodwin s.n.* (WVA).

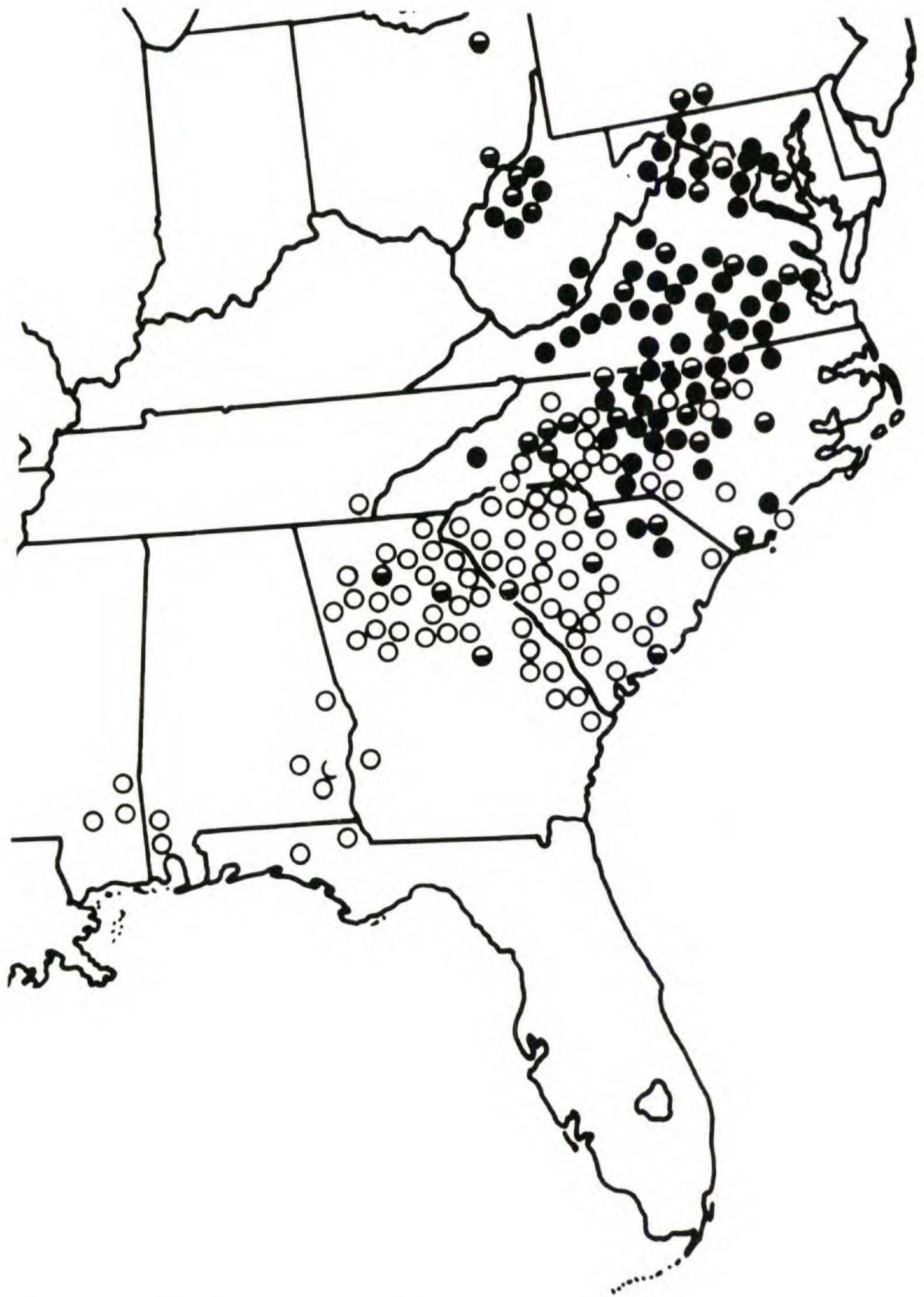


Figure 6. Map of southeastern United States showing distribution of *Chrysogonum virginianum* var. *virginianum* (black dots), var. *australe* (circles), and morphological intermediates (half-closed circles).

- 1b. *Chrysogonum virginianum* L. var. *australe* (Alexander ex Small) Ahles, Jour. Elisha Mitchell Sci. Soc. **80**: 173. 1964. Figure 5.

Chrysogonum australe Alexander ex Small, Man. Southeast. Fl. 1415. 1933.

TYPE: **Florida**. Jackson Co., "Dry woods, somewhat calcareous, about a mile east of Marianna" 16 March 1925, *R. M. Harper s.n.* (Holotype, NY!; isotypes, GH!, US!).

Diotostephus repens Cass. Dict. Sci. Nat. **48**: 544. 1827. TYPE: "Nous avons fait cette description, générique et spécifique, sur un très-petit échantillon sec, incomplet, en mauvais état, et dont nous ignorons l'origine," (Holotype, P? not located).¹

Chrysogonum diotostephus DC. Prodr. **5**: 510. 1836. *Nom. illegit.*, based on type of *Diotostephus repens* Cass.

Plants 3–14 cm. tall. Stems often decumbent. Leaves primarily basal with petioles 2–7 cm. long; blades ovate to obovate (sometimes narrowly ovate), 1.5–7 cm. long, 0.8–4 cm. wide, at base attenuate. Peduncles 2–9 cm. long. Outer phyllaries 6.5–9 mm. long, 2.5–4 mm. wide. Chromosome number, $n = 16$.

DISTRIBUTION. — Coastal plain and southern piedmont primarily in Mississippi, Alabama, Florida, Georgia, Tennessee, South and North Carolina (Figure 6).

PRINCIPAL FLOWERING DATES. — March to May.

This taxon was first described as a species by Cassini (1827) and then by Small (1933) from a collection from Jackson Co., Florida. Later, Ahles (1964) proposed the rank of variety which is the perspective adopted in the present treatment. The distribution of *Chrysogonum virginianum* var. *australe* is quite distinct from that of var. *virginianum* (Figure 6), but intermixing occurs commonly, particularly in North Carolina. *Chrysogonum virginianum* var. *australe* is located primarily on the coastal plain and southern piedmont, whereas var. *virginianum* is more concentrated on the northern piedmont and Appalachian highlands.

REPRESENTATIVE SPECIMENS. — **Alabama**. LEE CO.: Auburn, 10 Apr 1896, *Earle & Underwood s.n.* (NY). **Florida**. JACKSON CO.: along Chipola River at Marianna, *Godfrey 5443D* (NY). **Georgia**. BARTOW CO.: 2¼ mi NW of Acworth, *Duncan 8033*

¹Even though type material has not been located, the detailed description of *Diotostephus repens* by Cassini (1827), in which he mentions among other features the decumbent stems and clusters of condensed leaves, suggests strongly that the specimen before him was of *Chrysogonum virginianum* var. *australe*.

(GA). CLARKE CO.: near Lake Kirota at edge of Univ. Georgia campus, Athens, *Cronquist 4386* (GA, GH, US, NY). DEKALB CO.: open woods at base of Stone Mt., *Curtiss 6766* (GA, GH, NY, US). FORSYTH CO.: banks of the Chattahoochee River, *Duncan 5252* (GA). HARALSON CO.: Tallapoosa, *Way 50* (US). JASPER CO.: 3.5 mi SW of Monticello, *Duncan 22297* (GA). OGLETHORPE CO.: 7 mi NE of Lexington, *Cronquist 4973* (GA). RANDOLPH CO.: Little Pumpkin Creek just W of Lumpkin Rd., *Thorne & Muenscher 7784* (GA, GH, NY, US). WILKES CO.: 6 mi NE of Tignall, *Cronquist 4987* (GA, GH, NY). **Mississippi.** FORREST CO.: Ragland Hills, 12–13 mi SE of Hattiesburg, *Rogers 2056–B* (NCU). **North Carolina.** ALAMANCE CO.: Haw River, *Carlton 56* (NCU). CHATHAM CO.: near Emmaus Baptist Church, 3 mi from jct. of Co. Rte. 1346 & hwy 87, *Massey, Boufford & Williams 3833* (NCU). GASTON CO.: 2 mi W of Lucia, *Bell 1940* (NCU). MOORE CO.: near Carthage, 14 May 1928, *Harriot s.n.* (NCU). POLK CO.: Tryon, *Peattie 1618* (NCU). ROWAN CO.: Yadkin River near US 29 bridge, *Horton 694* (GA). VANCE CO.: W of Henderson, *Bell & Ahles 10888* (NCU). **South Carolina.** ABBEVILLE CO.: ¼ mi from Due West, *Anderson A-29* (NCU). BAMBERG CO.: W of Denmark, *Ahles & Haesloop 22176* (NCU). CALHOUN CO.: 4 mi SE of Lone Star, *Radford 9340* (NCU). DORCHESTER CO.: Four Holes Swamp on US 178, *Ahles & Haesloop 21913* (NCU). GREENWOOD CO.: Tolbert Branch, *Radford 20136* (NCU). LANCASTER CO.: 10 mi NNW of Lancaster, *Hardin & Duncan 15589* (GA). NEWBERRY CO.: Mills Creek (on SC 59), *Bell 7017* (NCU). RICHLAND CO.: Crane Creek near Cola, 29 Mar 1937, *Chapman s.n.* (GA). YORK CO.: S of Hickory Grove, *Ahles & Haesloop 22894* (NCU). **Tennessee.** BRADLEY CO.: on the Ocoee River, *Kearney 98* (US).

EXCLUDED NAMES

Chrysogonum album F. Br. Bull. B. P. Bishop Mus. 130: 342. 1935. TYPE: **French Polynesia:** Marquesas Islands, Hiva Oa, Feani, 850 m, 15 Dec. 1921, *F. & E. Brown 1088* (Holotype, BISH!). = **Oparanthus albus** (F. Br.) Sherff, Occas. Papers B. P. Bishop Mus. 12(19): 12. 1937.

Chrysogonum arnottianum (Wight) C. B. Clarke, Compos. Ind. 132. 1876. *Moonia arnottiana* Wight, Ic. 3(4): 9. t. 1105. 1846. TYPE: **India:** MADRAS: "Neilgherries and Pulney mountains in clumps of jungle — on the former common near the Avalanche Bungalow and in almost every clump of jungle from thence to near Sisparah," Sep. 1836 & Aug. 1845, *R. Wight 1610* [herbarium number] (Lectotype, K!; isotypes, GH! K! NY!; fragments from K isotype, US!). = **Moonia heterophylla** Arn. Nov. Actorum Caes. Leop.-Carol. German Nat. Cur. 18: 349. 1836.

Chrysogonum L. sect. **Baltimora** (L.) Baillon, Hist. Fam. Plant. 232. 1882. = **Baltimora** L. Mant. 158. 1771.

Chrysogonum coriaceum F. Br. Bull. B. P. Bishop Mus. **130**: 344. 1935. TYPE: **French Polynesia**: Tubuai Islands, Rapa, 1922, *E. H. Quayle X* (Holotype, BISH!). = **Oparanthus coriaceus** (F. Br.) Sherff, Occas. Papers B. P. Bishop Mus. **12(19)**: 11. 1937.

Chrysogonum dichotomum Vahl. ex West, Bidr. Ste Croix. 230. 1794. *nom. nud.*

Chrysogonum ecliptoides (F. Muell.) F. Muell. Census Austral. Pl. 83. 1882. *Pentalepis ecliptoides* F. Muell. Trans. Bot. Soc. Edinburgh **7**: 496. 1863. TYPE: **Australia**: "Arnhem's Land, in planitiebus originem fluvii Victoriae versus," 28 Mar. 1856, *P. Wolcott & M. Brown s.n.* (Holotype, not located). Although the holotype has not been located, a collection from Australia has been seen that was examined and cited by Bentham (1867): *F. Mueller s.n.*, Hooker's and Sturt's Creeks; K! US! [fragment]. = aff. **Blainvillea**.

Chrysogonum heterophyllum (Arn.) C. B. Clarke, Compos. Ind. 132. 1876. = **Moonia heterophylla** Arn. Nov. Actorum Caes. Leop.-Carol. German Nat. Cur. **18**: 349. 1836. TYPE: **Ceylon**: specific locality unknown, 1834-36, *Mrs. Walker s.n.* (Holotype, K; isotype, GH!).

Chrysogonum leandrii H. Humb. Not. Syst. Paris **15**: 256. 1958. TYPE: **Madagascar**: "environs de Tsiandro (Bemaraha)," 9 Feb. 1933, *J. Leandri 808* (Holotype, P!). = **Wedelia** sp.

Chrysogonum madagascariense H. Humb. Not. Syst. Paris **15**: 256. 1958. TYPE: **Madagascar**: "Bois tropophiles de l'Ouest sur calcaire (éocène) près de Majunga," Mar. 1925, *Perrier de la Bâthie 17278* (Holotype, P!). = **Wedelia** sp. This taxon is very similar to *Baltimora geminata* (Brandg.) Stuessy in both vegetative and floral features. The former differs, however, in the very small heads with fewer and rhombic phyllaries, in the longer anthers (1.4 mm.), in the very short paleae (1 mm.), and in the absence of pappus on ray and disc florets. The close resemblance of this taxon to both *Baltimora* and *Wedelia* Jacq. re-emphasizes the need for a careful study of *Wedelia* in relation to other genera such as *Aspilia* Thou., *Baltimora*, *Rensonia* S. F. Blake, and *Schizoptera* Turcz.

- Chrysogonum** L. sect. **Moonia** (Arn.) Baillon, *Hist. Fam. Plant.* 232. 1882. = **Moonia** Arn. *Nov. Actorum Caes. Leop.-Carol. German Nat. Cur.* 18: 348. 1836.
- Chrysogonum perrieri** (H. Humb.) H. Humb. *Fl. Madag. Fam.* 189. 3: 633. 1963. *Wedelia perrieri* H. Humb. *Mem. Soc. Linn. Paris* 25: 301. 1923. TYPE: **Madagascar**: Andranomavo (Ambongo), Feb. 1903, *Perrier de la Bâthie 1517* (Holotype, P!). = **Wedelia** sp.
- Chrysogonum peruvianum** L. *Sp. Pl.* 920. 1753. TYPE: **Peru**: date unknown, *Jussieu s.n.* (Holotype, P-JU). = **Zinnia peruviana** (L.) L. *Syst. ed.* 10. 1221. 1759. *fide* Torres (1963).
- Chrysogonum philippinense** Elmer, *Leaflets Philipp. Bot.* 1: 161. 1906. TYPE: **Philippine Islands**: Culion Island, "a dry open grassy valley at Halsey Harbor," Dec. 1902, *E. D. Merrill 514* (Holotype, probably PNH; isotype, NY!). = **Anisopappus chinensis** (L.) Hook. & Arn. *Bot. Beech. Voy.* 196. 1837.
- Chrysogonum procumbens** (DC.) F. Muell. *Census Austral. Pl.* 83. 1882. *Wollastonia procumbens* DC. *Prodr.* 5: 548. 1836. TYPE: **Australia**: "upon the cliffy shores of the islands of the north coast of Australia," 15 Apr. 1818, *A. Cunningham 57* (= 244) (Holotype, G-DC; IDC 800. 937: III. 7!; isotypes, K[2]!). = **Wedelia** sp.
- Chrysogonum** L. sect. **Quadrimeria** F. Br. *Bull. B. P. Bishop Mus.* 130: 341. 1935. = **Oparanthus** Sherff, *Occas. Papers B. P. Bishop Mus.* 12(19): 9. 1937.
- Chrysogonum rapense** F. Br. *Bull. B. P. Bishop Mus.* 130: 343. 1935. TYPE: **French Polynesia**: Tubuai Islands, Rapa, Maitua, "on talus with other trees and ferns," 180 m., 10 Oct. 1921, *A. M. Stokes 337* (Holotype, BISH!). = **Oparanthus rapensis** (F. Br.) Sherff, *Occas. Papers B. P. Bishop Mus.* 12(19): 11. 1937.
- Chrysogonum stenocephalum** H. Humb. *Not. Syst. Paris* 15: 257. 1958. TYPE: **Madagascar**: "massif de l'Ivakoany au nord de Tsivory, sur granite," 1300 m., Dec. 1933, *H. Humbert 12234* (Holotype, P!; paratype [*H. Humbert 14216*], P!). = **Wedelia** sp.

Chrysogonum trichodesmoides (F. Muell.) F. Muell. Census Austral. Pl. 83. 1882. *Pentalepis trichodesmoides* F. Muell. Trans. Bot. Soc. Edinburgh 7: 496. 1863. TYPE: **Australia**: "In vallibus rupestribus sinus Nikol Bay," 1861, P. Walcott s.n. (Holotype, K!). = aff. **Blainvillea**.

Chrysogonum L. sect. ?**Trigonospermum** (Less.) Baillon, Hist. Fam. Plant. 233. 1882. = **Trigonospermum** Less. Syn. Gen. Comp. 214. 1832.

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